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Ontario

Ontario Ministry of Agriculture, Food and Rural Affairs

2000 SUPPLEMENT

Guide to Weed Control

Publication 75

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Corrections

1. Table 3 (page 69) — DISTINCT contains two modes of action groups 4 and 19.
2. Table Corrections — Crop Registrations
   - Table 9, *Beans* (page 86)
     — REFLEX is registered on Black, Dutch Brown, Cranberry, Kidney, Pinto, Snap, Yellow Eye and White beans
   - Table 18, *Fruit Crops* (page 228)
     — 2.4-D is registered for use on Apples, Apricot, Cherries & Plums, Peaches, and Pears
     — POAST ULTRA is registered for use on Apricot, Cherries and Plums
3. Rate Correction (page 106)

Corn

postemergence (page 106)

prosulfuron + dicamba	10 g/ha + 0.14 kg/ha		AVAILABLE ONLY as a co-pack called PEAKPLUS to be applied with a non-ionic surfactant. Controls most annual broadleaf weeds including triazine resistant lamb's-quarters and pigweed up to the 6 leaf stage; cocklebur and velvetleaf up to the 6 leaf stage; and ragweed up to the 8 leaf stage. Apply when the corn is in the 2 to 7 leaf stage. DO NOT apply to corn treated with organophosphorus insecticides. DO NOT APPLY TO SWEET, SEED CORN OR POPCORN.
PEAKPLUS			
(PEAK (75WG)	13.3 g/ha	5.3 g/ac	
+ BANVEL II (480g/L))	+ 0.3 L/ha	+ 0.12 L/ac	
plus non-ionic surfactant	0.2 % v/v	0.2 % v/v	

Spring Additions

There have been several **NEW** product registrations for 2000. Following are a few remarks about each treatment.

Table 1. Herbicides Used in Ontario

Common Name	Trade Name	Formulation	Guaranteed Active Ingredient	Ont. Sch.	Herbicide Grouping	Interval Before Rainfall	Winter Storage	Manufacturer's Agent Codes
flufenacet/ metribuzin	AXIOM	DF	68%	2	5,15		C	BBB
isoxaflutole	CONVERGE 75 WDG[1]	WG	75%	2	28		B	RHQ
atrazine	CONVERGE 480 [1]	SC	480 g/L	2	5		B	RHQ
glyphosate IPA[2]	CREDIT	Sn	356 g/L	3	9		B	NUA
imazethapyr/ bentazon	CLEAN SWEEP[1]	Sn + Sn	240 g/L + 480 g/L	2	2,6	6	A	CYC
imazamox/ bentazon	MERIDIAN PLUS[1]	WG + Sn	70% + 480 g/L	2	2,6	6	A	CYC
glyphosate IPA[2]	VANTAGE	Sn	356 g/L	3	9		B	DWE
glyphosate IPA[2]	VANTAGE PLUS	Sn	360 g/L	3	9		B	DWE

[1] available only as a co-pack

[2] IPA is the isopropyamine salt of glyphosate. The other salt of glyphosate is TMS (trimethylsulfonium) which is the form in Touchdown. All other glyphosate products contain the IPA salt of glyphosate.

Table 5. Herbicide Crop Rotation and Soil pH Restrictions

100-05801/

(Page 72)	Field Crops																												
Trade Name	Alfalfa	Barley	Barley (underseeded)	Berans, kidney	Beans, white	Canola, including RR	Canola, IMI Smart	Clover, red	Corn, field including RR, LL, PP	Corn, CL	Corn, seed	Flax-linseed	Oats	Oats (underseeded)	Peanuts	Rye, fall	Rye, fall (underseeded)	Soybeans	Sunflowers	Tobacco	Wheat, spring	wheat, spring (underseeded)	wheat, winter	wheat, winter (underseeded)					
	Number of months between application and planting																												
AXIOM	10	10	10	10	10	10	10	10	-	-	10	10	10	10	10	10	10	-	10	10	10	10	4	10					
CONVERGE	10	10	f	f	f	22	22	f	-	-	10	f	10	f	f	f	f	10	f	f	10	f	4	f					
CLEAN SWEEP	22	9	22	22	22	22	9	22	9	9	22	22	22	22	22	22	22	-	22	22	9	22	3.3	22					
MERIDIAN PLUS	f	9	f	9	9	22	9	f	9	9	22	f	9	f	f	f	f	-	f	f	f	f	4	f					

(Page 73)	Horticultural Crops																												
Trade Name	Asparagus	Beans, lima	Beans, snap	Beets, red	Beets, sugar	Broccoli	Brussel sprouts	Cabbage	Carrots	Cauliflower	Celery	Corn, sweet	Cucumber	Garlic	Herbs	Lettuce	Muskmelon	Onions	Parsnips	Peas	Peppers	Potatoes	Pumpkin	Rutabaga	Spinach	Squash	Tomatoes (transplanted)	Watermelon	
AXIOM	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	10	f	f	f	f	f	f	
CONVERGE	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	10	f	f	f	f	f	f	
CLEAN SWEEP	22	22	22	f	f	22	22	22	22	22	22	22	22	22	22	22	22	22	22	-	22	22	22	22	22	22	22	22	
MERIDIAN PLUS	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	9	f	

= Registered for use f = field bioassay, user assumes liability for all crops not indicated on label

Sugar Beets (processing) (page 191)

Caution about Herbicide Residues: Sugar beets are one of most sensitive crops to herbicide residues from the previous year's crop. They are particularly sensitive to residues from many of the Group 2 herbicides, including Pursuit, Broadstrike, Classic and Peak. Low soil pH (below 6.0) or high soil pH (above 7.5) can be a factor to delay the breakdown of these herbicides, increasing crop injury in rotational crops. Please see ***Table 5, Herbicide Recropping Restrictions*** (page 73, 2000 Publication 75), as well as product labels and your herbicide and sugar company representatives for more details on your situation.

Active Ingredient TRADE NAME (Formulation)	RATE (active) PRODUCT PER HA	RATE PRODUCT PER ACRE	REMARKS (For more information see Pub 75 and product label)
Special Methods of Weed Control			
Preplant-Site Preparation Prior to Any Crop **Stale Seedbed and Inter-Row Weeding** **Post Harvest** (page 74)			
glyphosate CREDIT			• Rates and uses are similar to other glyphosate products, see label for details.
glyphosate VANTAGE			• Rates and uses are similar to other glyphosate products, see label for details.
glyphosate VANTAGE PLUS			• Rates and uses are similar to other glyphosate products, see label for details.
Beans (Black, Pinto and Snap)			
post emergence grass herbicide (page 83)			
clethodim SELECT (240g/L) plus surfactant AMIGO	0.03 to 0.046 kg/ha 0.125 to 0.19 L/ha 0.5% v/v	 0.05 to 0.076 L/ac 0.5 v/v	• Registered for use on Black beans and Pinto beans only. • Apply when annual grasses and volunteer cereals are in the 2 to 6 leaf stage. • add the surfactant AMIGO at 5L/1000L spray solution
sethoxydim POAST ULTRA (450 g/L) plus surfactant/solvent MERGE	0.5 kg/ha 1.1 L/ha 1 to 2 L/ha	 0.45 L/ac 0.4 to 0.8 L/ac	• Now registered for use on Snap beans. Also labeled on lima, white and kidney beans. • For quackgrass control. Thorough preplant tillage will ensure more uniform quackgrass emergence. Follow this with cultivation 7 days after treatment in wide row crops. • Apply using 100 to 200 L/ha of water (40 to 80 L/ac).

Corn

soil applied grass herbicide (page 95)

flufenacet/ metribuzin	0.571 to 1 kg/ha		• Apply PRE.
AXIOM (68% DF)	0.84 to 1.47 kg/ha	0.34 to 0.59 kg/ac	• DO NOT apply to coarse textured soils with less than 2% OM.
			• DO NOT USE ON SWEET OR SEED CORN.

soil applied grass and broadleaf herbicide (page 97)

isoxaflutole	79 g/ha		• Apply PRE.
CONVERGE (75WDG)	105 g/ha	42 g/ac	• CONVERGE 75 WDG must be applied with CONVERGE 480.
plus atrazine	0.8 kg/ha		• Temporary yellowing of lower corn leaves may occur under adverse weather or soil conditions.
CONVERGE 480 (480g/L)	1.67 L/ha	0.67 L/ac	• DO NOT apply to sand or loamy sand soils with less than 2% OM.
			• DO NOT USE ON SWEET OR SEED CORN.
			• CONVERGE is a package containing CONVERGE 75 WDG and CONVERGE 480.
flufenacet/ metribuzin	0.571 to 0.859 kg/ha		• Apply PRE.
AXIOM (68%DF)	0.84 to 1.26 kg/ha	0.34 to 0.5 kg/ac	• DO NOT apply to coarse textured soils with less than 2% OM.
plus atrazine	1 to 1.49 kg/ha		• DO NOT USE ON SWEET OR SEED CORN.
AATREX NINE-0	1.1 to 1.65 kg/ha	0.44 to 0.66 kg/ac	
flufenacet/ metribuzin	0.571 to 0.859 kg/ha		• Apply PRE.
AXIOM (68%DF)	0.84 to 1.26 kg/ha	0.34 to 0.5 kg/ac	• DO NOT apply to coarse textured soils with less than 2% OM.
plus dicamba	0.6 kg/ha		• DO NOT USE ON SWEET OR SEED CORN.
BANVEL II (480g/L)	1.25 L/ha	0.5 L/ha	
flufenacet/ metribuzin	0.571 to 0.859 kg/ha		• Apply PRE.
AXIOM (68%DF)	0.84 to 1.26 kg/ha	0.34 to 0.5 kg/ac	• DO NOT apply to coarse textured soils with less than 2% OM.
plus dicamba/atrazine	1.404 to1.72 kg/ha		• DO NOT USE ON SWEET OR SEED CORN.
MARKSMAN ((1:2)401g/L)	3.5 to 4.3 L/ha	1.4 to 1.72 L/ha	

Sorghum and Millet for Forage

postemergent broadleaf herbicide (page 126)

prosulfuron + dicamba PEAKPLUS (PEAK (75WG) + BANVEL II (480g/L)) plus non-ionic surfactant AGRAL 90, AGSURF or CITOWETT PLUS	10 g/ha + 0.14 kg/ha 13.3 g/ha + 0.3 L/ha 0.2 % v/v	 5.3 g/ac + 0.12 L/ac 0.2 % v/v	• Available only as a co-pack called PEAKPLUS to be applied with a non-ionic surfactant • Apply as a broadcast spray. • Apply when the crop is between 3 and 5 leaf-stage. • Best results when applied to actively growing weeds in the 1-6 leaf stage. • DO NOT apply by air. • Make only one application per year.

Soybeans

soil applied grass herbicide (page 133)

flufenacet/ metribuzin AXIOM (68% DF)	0.571 to 1.0 kg/ha 0.84 to 1.47 kg/ha	 0.34 to 0.59 kg/ac	• Apply PRE. • Plant soybeans at least 4 cm deep • DO NOT apply to coarse textured soils with less than 2% OM. • Do not use on metribuzin sensitive varieties. See Publication 802, *Ontario Soybean Variety Trials, 2000.*

soil applied tank mix options (page 135)

flufenacet/ metribuzin AXIOM (68% DF) plus metribuzin SENCOR 75DF (75WG)	0.571 to 0.859 kg/ha 0.84 to 1.26 kg/ha 0.375 to 0.62 kg/ha 0.5 to 0.83 kg/ha	 0.34 to 0.5 kg/ac 0.2 to 0.33 kg/ac	• Apply PRE. • Plant soybeans at least 4 cm deep • DO NOT apply to coarse textured soils with less than 2% OM. • Do not use on metribuzin sensitive varieties. See Publication 802, *Ontario Soybean Variety Trials, 2000*
flufenacet/ metribuzin AXIOM (68% DF) plus linuron LOROX DF (50DF)	0.571 to 0.859 kg/ha 0.84 to 1.26 kg/ha 0.85 to 1.15 kg/ha 1.7 to 2.3 kg/ha	 0.34 to 0.5 kg/ac 0.68 to 0.92 kg/ac	• Apply PRE. • Plant soybeans at least 4 cm deep • DO NOT apply to coarse textured soils with less than 2% OM. • Do not use on metribuzin sensitive varieties. See Publication 802, *Ontario Soybean Variety Trials, 2000*
flufenacet/ metribuzin AXIOM (68% DF) plus metribuzin SENCOR 75DF (75WG) plus linuron LOROX DF (50DF)	0.571 to 0.859 kg/ha 0.84 to 1.26 kg/ha 0.375 to 0.49 kg/ha 0.5 to 0.65 kg/ha 0.7 to 1 kg/ha 1.4 to 2 kg/ha	 0.34 to 0.5 kg/ac 0.2 to 0.26 kg/ac 0.56 to 0.8 kg/ac	• Apply PRE. • Plant soybeans at least 4 cm deep • DO NOT apply to coarse textured soils with less than 2% OM. • Do not use on metribuzin sensitive varieties. See Publication 802, *Ontario Soybean Variety Trials, 2000*

postemergence (page 143)

imazethapyr + bentazon CLEAN SWEEP plus liquid fertilizer	0.075 + 0.84 kg/ha 0.312 + 1.75 L/ha 2 L/ha	0.125 + 0.7 L/ac 0.8 L/ac	• available as a co-pack containing Pursuit and Basagran Forté • Apply postemergent to actively growing weeds in the 2 to 6 leaf stage. • Use of liquid fertilizer (28-0-0, 10-34-0 or 32-0-0) is required. • Some rotational cropping restrictions apply (see label).
imazamox + bentazon MERIDIAN PLUS plus liquid fertilizer	0.025 + 0.6 kg/ha 36 g + 1.25 L/ha 2 L/ha	14.5 g + 0.5 L/ac 0.8 L/ac	• available as a co-pack containing imazamox and Basagran Forté • Apply postemergent to actively growing weeds in the 2 to 6 leaf stage. • Apply from cotyledon to the fourth trifoliate stage of soybeans. • Use of liquid fertilizer (28-0-0 or 32-0-0) is required.

Herbs (Peppermint and Spearmint)

soil applied grass and broadleaf herbicides (page 178)

terbacil SINBAR (80 WP)	1.4 kg/ha 1.75 kg/ha	0.7 kg/ac	• Apply once from the end of September to the beginning of October. • Apply once per crop season. • Do not apply closer to harvest than 9 or 10 months. • Do not use on soils with less than 1% OM.

Peppers (Transplanted)

soil applied grass herbicide (page 184)

Ethalfluralin EDGE (60 DC)	0.66 to 0.84 kg/ha 1.1 to 1.4 kg/ha	0.44 to 0.56 kg/ac	• Apply PPI. • DO NOT apply to peat or muck soils (>15% OM). • DO NOT apply to coarse textured soils with less than 2% OM. • DO NOT apply to fields spread with manure in the last 12 months. • DO NOT apply by air. • DO NOT apply trifluralin and/or ethalfluralin on the same land for 2 consecutive years.

Specialty Vegetables (Snow Peas)

postemergent broadleaf herbicides (page 189)

bentazon BASAGRAN (480 g/L) plus oil concentrate ASSIST	0.84 kg/ha 1.75 L/ha 1 to 2 L/ha	0.7 L/ac 0.4 to 0.8 L/ac	• Apply after the crop is at the 3-leaf stage and when weeds are small and actively growing. Maximum sizes for individual weeds are listed on the label. • Use only one application per year. • Apply in 300 L water/ha. • DO NOT apply closer then 30 days of harvest.

Herbicide Weed Control Ratings

Weed control ratings are given as 0–9 where 0 indicates no control and 9 indicates 90%-100% control under ideal conditions.
Ratings are subjective values based on best available information and give general comparisons based on use as described in this guide.
Crop tolerance ratings are E – Excellent, G – Good, F – Fair, P – Poor.
Under unfavourable conditions (e.g., too dry, too wet, too cold, or poor application) the herbicides may not be as effective as indicated.
Ratings may vary with weed and crop stage and with the timing and rates of the product(s) being used.
Ratings in **BOLD** suggest the weed is listed on the product label for control or suppression.
Please see product label for more information on registered weed species, product uses and precautions.

		Grasses							Annual Broadleaves										Perennials							
Treatment	**Trade name**	barnyard grass	crabgrass	fall panicum	foxtail, green	foxtail, yellow	old witch grass	proso millet	buckwheat, wild	cocklebur	lady's thumb	lamb's-quarters	mustards	nightshades, annual	pigweeds	ragweed	triazine resistant	velvetleaf	bindweed, field	horsetail	milkweed	nutsedge	quackgrass	sow-thistle	thistle, Canada	**Crop Tolerance**
Peppers – soil applied herbicides																										
ethalfluralin	EDGE	**9**	**9**	**8**	**9**	**9**	**9**	7	8	2	6	8	2	**6**	**8**	2	7	2	4	2	2	2	**2**	2	2	E
Beans – post emerge herbicides																										
clethodim	SELECT	**9**	**8**	**9**	**9**	**9**	**9**	**9**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**7**	0	0	E
Corn – soil applied herbicides																										
flufenacet/ metribuzin	AXIOM	**9**	9	8/9[a]	**9**	**9**	9	6	?	?	8	**8**	9	8	**9**	**7**	7	6	?	0	0	?	0	0	0	E
isoxaflutole + atrazine	CONVERGE	**9**	**9**	?	**9**	9	**9**	?	**8**	?	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	?	0	0	0	0	0	0	G
Soybeans – soil applied herbicides																										
flufenacet/ metribuzin	AXIOM	**9**	9	8/9[a]	**9**	**9**	9	6	?	?	8	**8**	9	8	**9**	**7**	7	6	?	0	0	?	0	0	0	E
Soybeans – post emerge herbicides																										
imazethapyr + bentazon	CLEAN SWEEP	**9**	**8**	6	**9**	**9**	**9**	**8**	**8**	**9**	**9**	**8**	**9**	**9**	**9**	**8**	**8**	**9**	5	2	2	**8**	2	**5**	**7**	G
imazamox + bentazon	MERIDIAN PLUS	**8**	6	**8**	**9**	**9**	9	?	7	**7**	**9**	**8**	**9**	**9**	**9**	**8**	**8**	**9**	?	?	?	**8**	5	5	?	G

? Insufficient information available to make a rating a – Use the high rate of herbicide for optimum control

Published by the Ministry of Agriculture, Food and Rural Affairs
© Queens Printer, Toronto, Ontario
ISSN # 0-7778-6399-5
POD RV 03-2000

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